

SAUNATEC GROUP Oy

New **HELO- HSX M** steam generator for home and professional use.



- Operating instructions
- Installation instructions

Operating and installation instructions for models:
HELO HSX M 34, 47, 60, 77, 95, 120, 140.

**Technical specifications:**

- Voltage: 400V – 415V 3N~ 50Hz (230V – 240V 1N~ 3.4 – 7.7 kW).
- Power alternatives: 3.4kW-14kW.
- Enclosure rating: IP 20.
- Installation mounting: Floor/Wall.
- Water tank material: Aisi 316, acid-resistant steel.
- 2-phase control for thermal resistance. (Not in the special Belgian version)
- Steamer dimensions: 520 x 380 x160 mm

Easy to use:

- Automatic discharge and flush programme.
- Automatic fill and water level control.
- Floor or wall mounting.
- Digital control panel.
 - Temperature control
 - Time setting
 - Light control
- Control panel can be installed inside the steamroom.
- Magnetic valve equipped with a large discharge port, allowing larger contaminants and lime deposits to be flushed from the tank after each use. (Accessory)

Easy to maintain:

- Replaceable resistors (3 pcs), 1 of which is equipped with a thermal fuse.
- Lime remover (citric acid) fill port is conveniently located on top of the steam generator.
- Components can be easily replaced:
 - Circuit board
 - Thermal resistors
 - Surface level sensor

OPERATION AND INSTALLATION:

The HSX M steam generator is only intended for use in the heating of steambaths. Use of the steam generator in any space other than intended can result in structural damage.

The manufacturer is not liable for any damages caused by installation in a space not intended for steam bath use or misuse of the generator.

Before connecting the steam generator to the mains power, connect all water and steam lines. All lines must be connected with the greatest care. Ensure that all joints are properly sealed. Although thread seal tape can be used to properly seal threaded joints, soldering the joints is recommended.

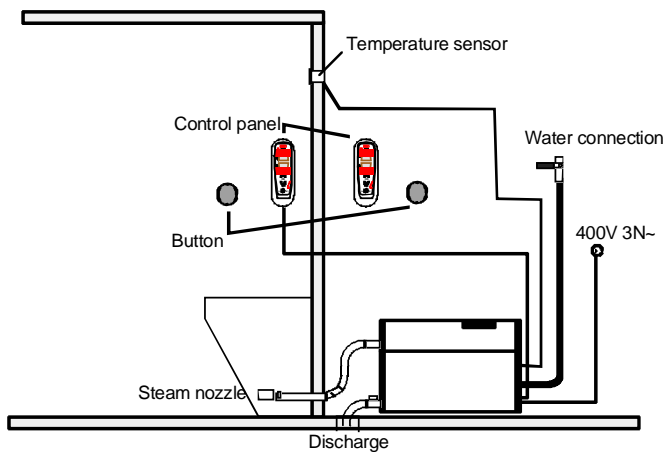
The steam generator should be placed away from water and moisture (dry space). The space should be well-ventilated, as the steam generator also generates heat. The minimum recommended safety clearance on each side and above the generator is 30 cm. When placing the steam generator, also take into consideration the space required for its maintenance.

Ensure that there is a drain in close proximity to the steam generator for discharging the tank.

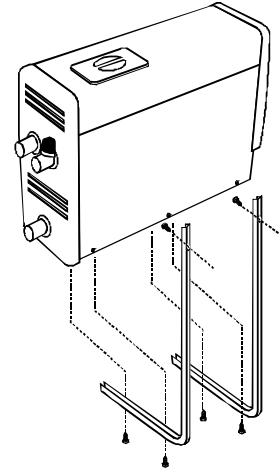
The steam generator can be mounted on the floor (free standing) or on the wall using mounting brackets. When using wall brackets, use a fastening method and mounting screws appropriate to the wall material in question. When filled with water, the steam generator weighs approx. 17 kg.

If the automatic discharge valve is being used, a wall-mounting is recommended to ensure the proper discharge pressure in the discharge pipe leading into the drain.

HSX M installation



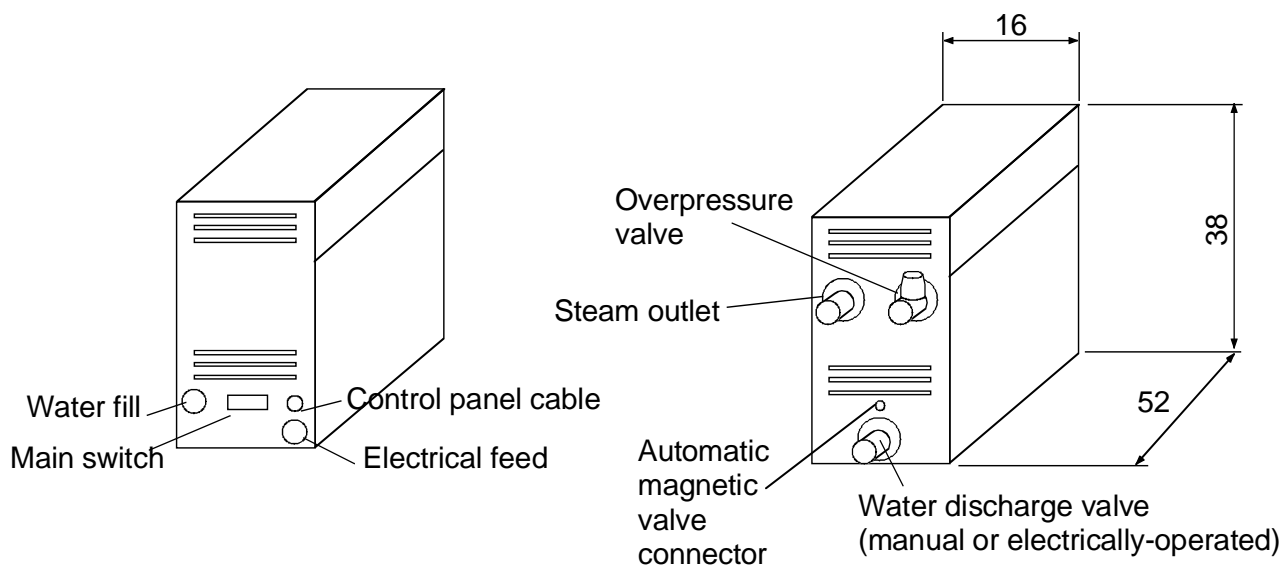
Location of control panel and button



Steam generator wall mounting

The control panel can be mounted either inside or outside the steamroom. If the control panel is mounted outside the steamroom, a separate thermostat connected to the circuit board **must always** be used.

EQUIPMENT CONNECTIONS



Water and steam line connection

Connect the $\frac{3}{4}$ " flexible water line hose (included in package) from the water connector on the steam generator installation panel (see figure) to the household cold water line. The water pressure should be a minimum of 0.2 bar and maximum of 10 bar. The water feed pipe should be fitted with a manual shutoff valve, which can be used to cut off the flow of water to the generator if it will be out of use for an extended period of time.

Observe local regulations when installing the steam generator.

The steam line connector should be at least 18x16 mm (generator output: 3.4 kW-9.5 kW) and 22x20 mm (generator output: 12.0 kW- 14.0 kW) copper piping or a similarly sized heat-resistant silicone hose. The steam line diameter should be consistent for its entire length.

The steam line should go up or down from the steam generator into the steamroom. **NO** drainage traps/water pockets may be installed on the line - any water condensation forming in the steam line must be able to run freely into the steamroom or back into the steam generator. If an odourising pump has been connected to the steam generator, the line discharge must **always** run away from the steam generator, to ensure that the chemicals do not enter the tank.

The maximum recommended steam line length is 5 m.

Additional steam line insulation is always recommended, both for safety reasons and to prevent water condensation in the line.

WARNING! Hot steam can cause severe burns.

The manual drain valve supplied with the steam generator is used to empty the steam generator tank. An electrically-operated magnet valve is available as an accessory.

The steam generator tank should be discharged after each use. This will extend the service life of the generator and reduce lime deposits.

ELECTRICAL CONNECTIONS:

The steam generator is connected (semi-fixed connection) to the mains power, in accordance with local installation regulations.

Steamer	Power KW	400V/415V 3N Amp	230V/240V 1N Amp	230V3~ Amp	Room size m ³ *)
HSX 34	3.4	5/5	15/14	8/8	1.5-2.5
HSX 47	4.7	7/6,5	20/19	12/11	2.5-5
HSX 60	6.0	9/8	26/25	15/14	5-7
HSX 77	7.7	12/11	33/32	19/18	7-10
HSX 95	9.5	15/13		24/23	10-12
HSX 120	12.0	19/17		30/29	12-15
HSX 140	14.0	23/21		35/34	15-18

Electrical connections are only to be installed by a licensed electrician.

*) Walls made of heavy materials, such as concrete, brick or stone require a higher output to generate sufficient heat. Ventilation must also be given extra power.

The required power output can be estimated using the fomula below.

Volume (m3) x K1 x K2 = Required output (kW)

Ventilation	K1 = 0.75
No ventilation	K1 = 0.52
Acrylic walls	K2 = 1.00
Light construction wall: drywall + tile	K2 = 1.25
Heavy construction wall: stone, concrete + tile	K2 = 1.50

Steam generator 2-phase control: (Not in the special Belgian version)

The steam generator thermal resistors are 2-phase controlled.

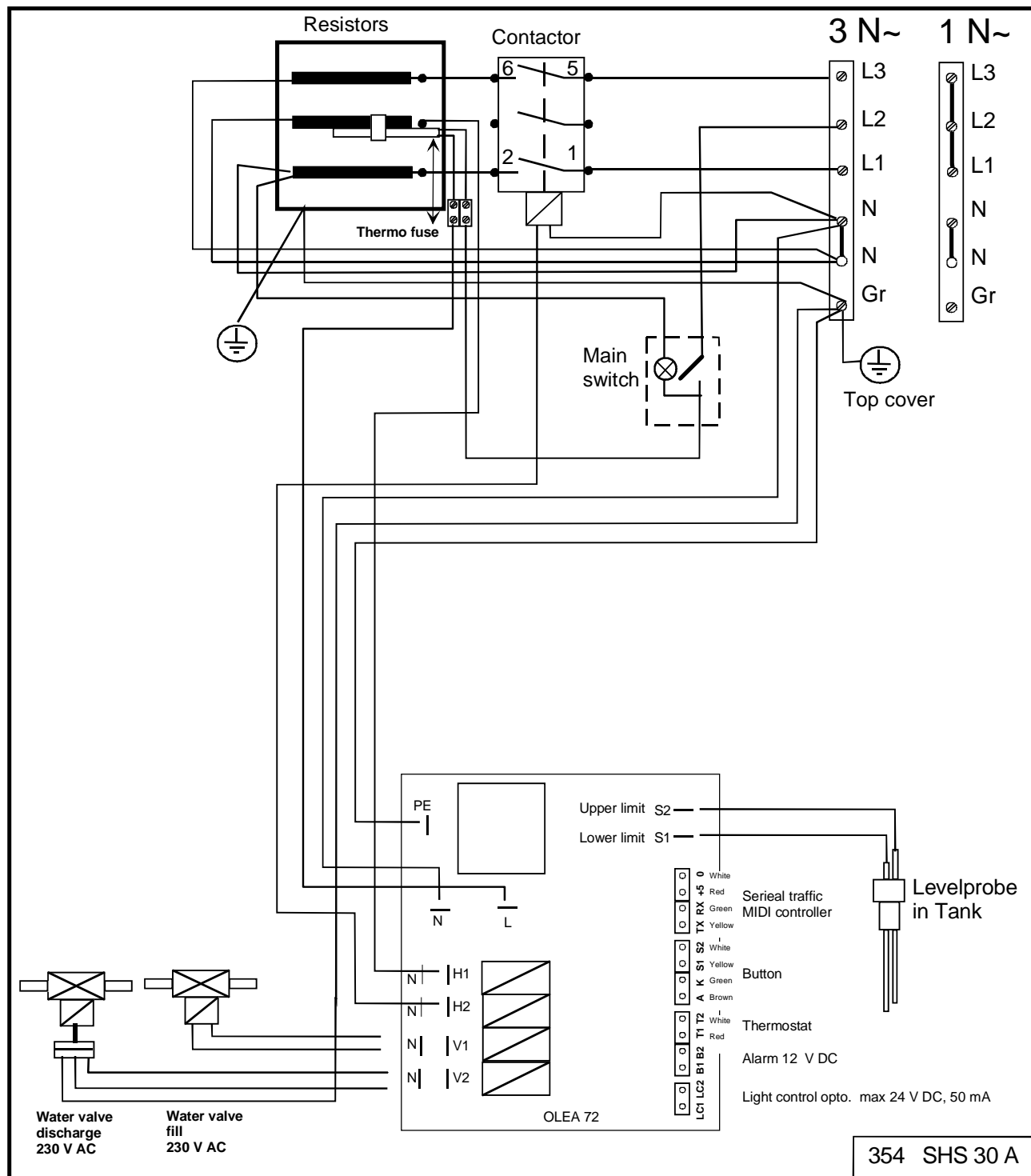
Example: The temperature is set for +43 °C. When the temperature reaches +43 °C two resistors are switched off with a contactor and one remains on to maintain the temperature with a relay on the circuit board. If the temperature drops 1 °C, all resistors will be switched back on. If the temperature rises 1 °C, all three resistors will be shut off. This will ensure an even steam output for the duration of operation.

CONNECTION SCHEMATICS:

HSX M 3,4 kW - 7,7 kW

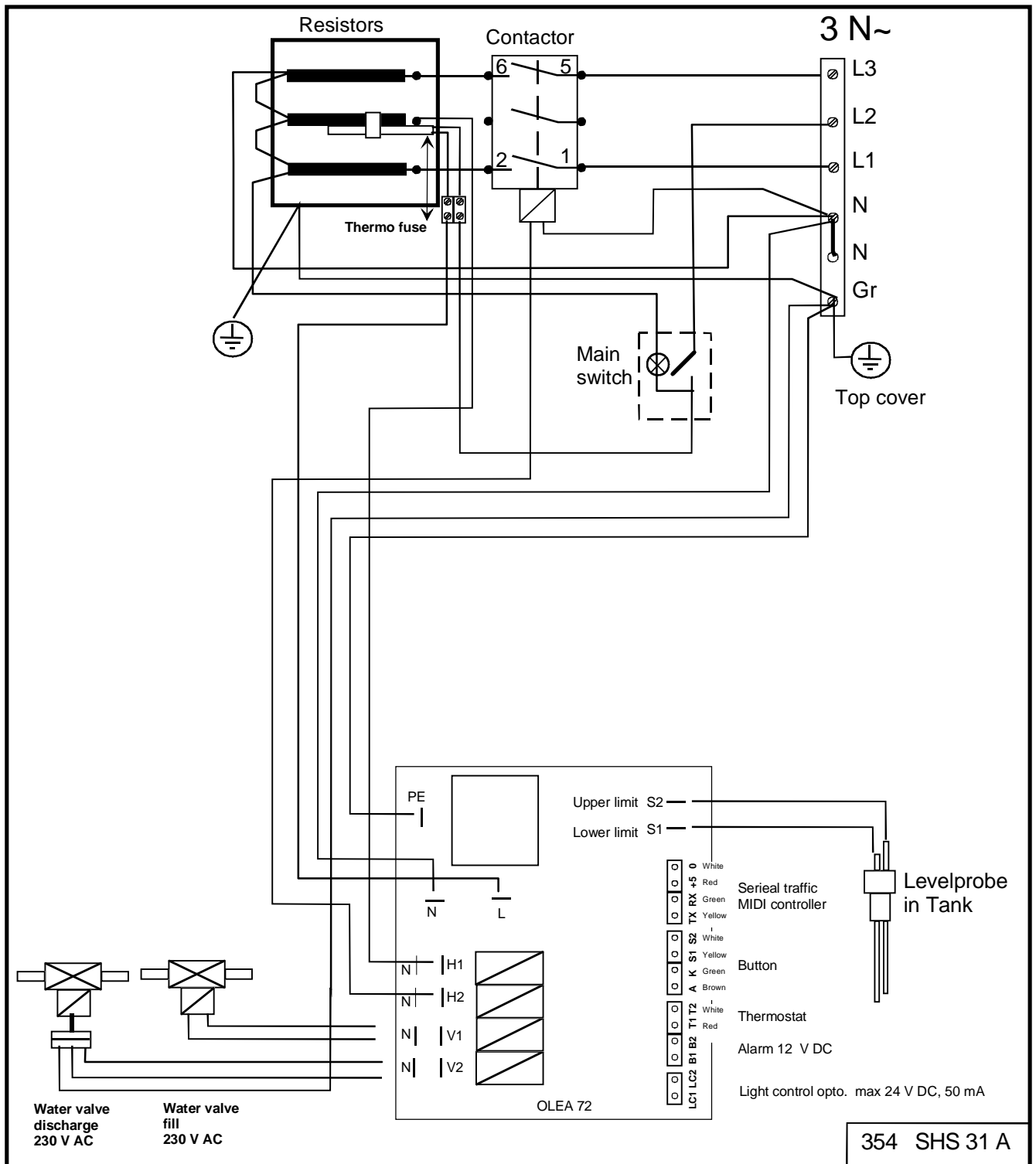
3 N~ 400 V - 415 V or

1 N~ 230 V - 240 V

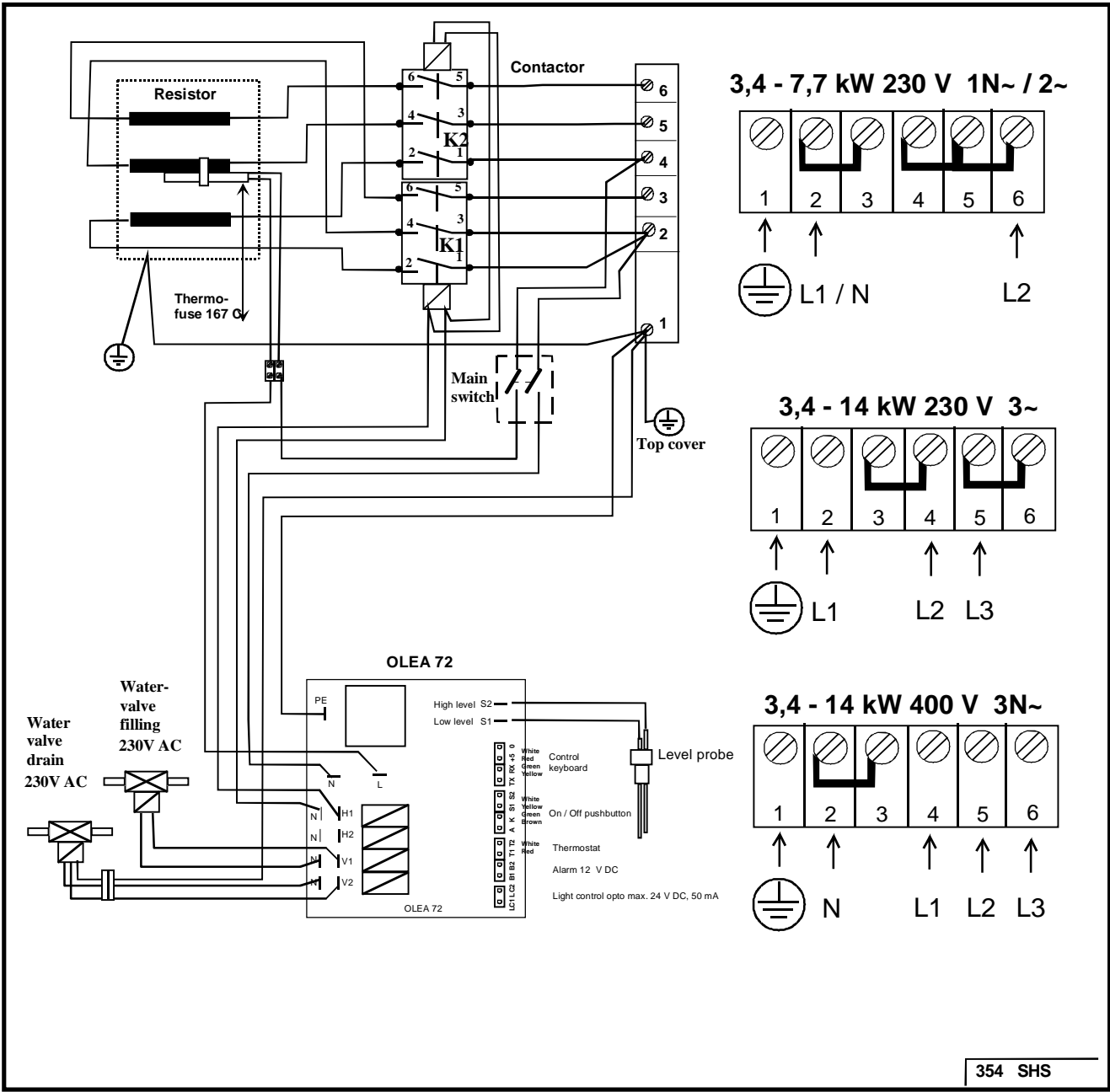


HSX MIDI 9,5 - 14 kW

3 N~ 400 V - 415 V

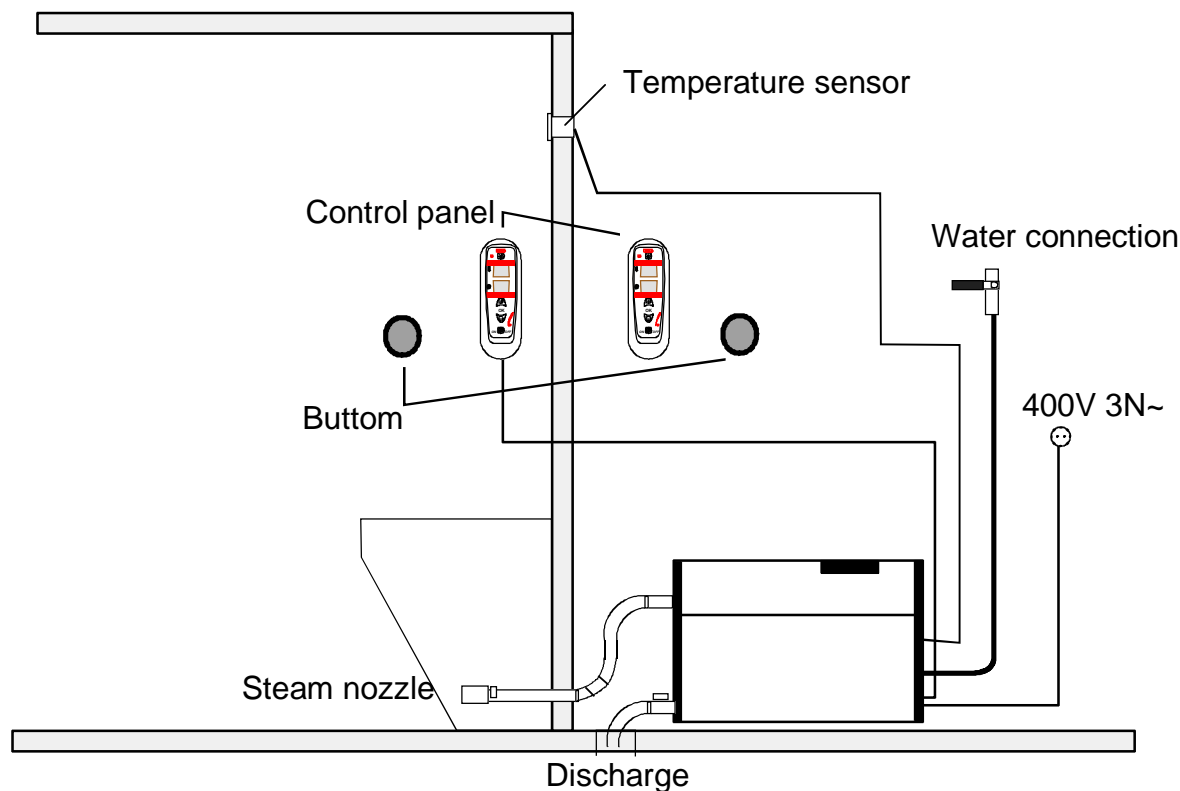


HSX-M 3,4 - 14 kW Special Belgian version



354 SHS

TEAM GENERATOR AND AUXILIARY PARTS INSTALLATION:



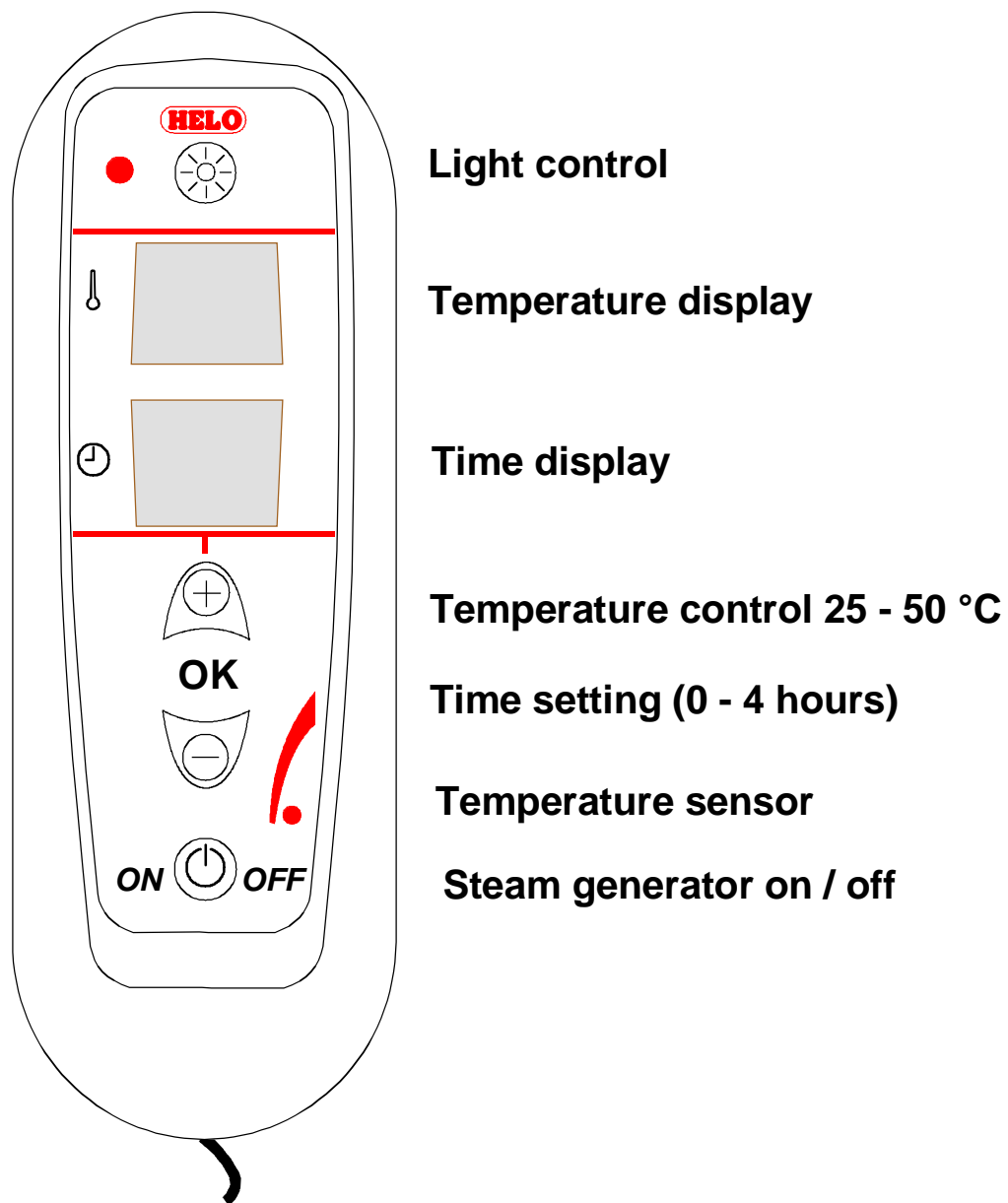
The **control panel** can also be installed inside the steamroom. If the control panel is installed outside the steamroom or so low that its own thermostat will not display the proper temperature, a separate thermostat must be used, which is connected directly to the circuit board and installed 170 cm above floor level, preferably on the wall opposite the steamroom door.

The push button can be fitted either in the steam room or outside of it. In addition it is also recommended to install a limiting thermostat to prevent the rise of the temperature above +50 °C when the steam room is used for longer than 30 minutes, which is the fixed operating time of a steamer equipped with a push button. See the separate installation and connection picture.

The **steam nozzle(s)** are installed approx. 20 – 40 cm above floor level under the bench or seat, or on the wall, making sure that the hot steam does not burn your feet. When placing the nozzles, also make sure that they will not be touched accidentally. **The steam temperature is + 100 °C** and can cause severe burns.

The thermostat is installed at a height of 170 cm, preferably on the wall opposite the door. The installation space for the thermostat should also be sealed with a suitable material to prevent the seeping of moisture into the structure. The thermostat is connected directly to the steamer circuit card and its program will automatically incorporate it, see the connection picture.

CONTROL PANEL HSX M



Digital control panel

- ON/OFF button for steam generator
- OK button
 - Bathing temperature selector button (temperature display flashes)
 - Bathing time selector button (time display flashes)
 - + button increases both time setting and temperature value
 - button decreases both time setting and temperature value
- Light control button, opto switch max. 24 V DC, 50 mA, (normal open)

Control panel function:

The steam generator is turned on by pressing the ON-OFF button on the control panel. After this, the temperature display will begin to flash. The temperature can be set to the degree (ranging between 25 °C – 50 °C) by pressing the + or – buttons. If the temperature value on the display is correct, press the OK button and move on to the time display. While the display is flashing, you can set the time to the minute (up to 90 minutes) using the + or – buttons, after which the display will change to hours (max. 4 hours).

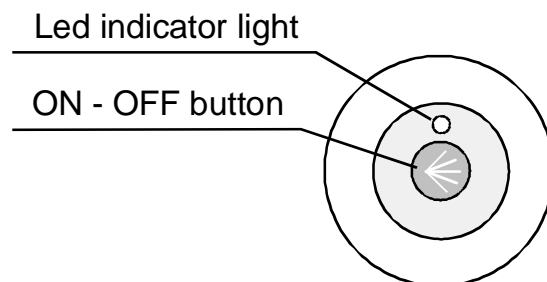
When the time remaining reaches 90 minutes, the display will change back to minutes. Any time beyond 90 minutes is only displayed in full hours.

Light control:

Lights can be controlled by a control panel button, which, when pressed, will activate an LED next to the button.

Connectors LC1 and LC2 on the circuit board are for light control. The circuit board draws external voltage (24V DC max. 50mA), which is switched to connector LC1. When the light button is pressed, the circuit board transistor will transfer power to connector LC2, which controls the actual lighting unit.

BUTTON HSX M



Button function:

Turning on the steam generator with the button will take 30 minutes, at which time the LED above the button will come on. The steam generator time cannot be set – it will shut itself off. The steam generator can also be shut off before time runs out by pressing the button, at which time the LED will turn off. If desired, the steam generator can be turned on again.

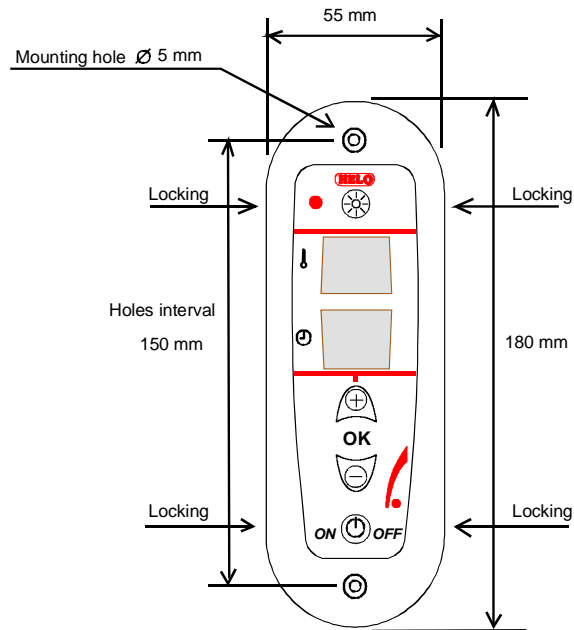
When using **the push button** it is recommended to install the limiting thermostat to prevent the rise of the temperature above +50 °C when the steam room is used for longer than 30 minutes, which is the fixed operating time of a steamer equipped with a push button. See the separate installation and connection picture.

The 2-phase control works with the button control version by switching off two thermal resistors with a contactor when the thermostat measures a temperature of +50 °C. When the temperature drops 1 °C, all three resistors are switched back on. If the temperature rises above +50 °C, all three resistors will be switched off.

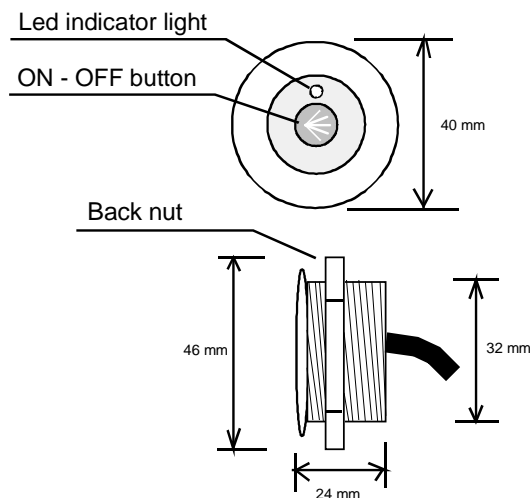
CONTROL PANEL, BUTTON AND THERMOSTAT INSTALLATION:

The control panel is filled with mass, which makes it moisture-resistant. The control panel can be installed directly in the wall. The installation hole in the steamroom should be sealed to prevent moisture from travelling along the line, thus concealing the cable behind the control panel. Alternatively, the cable can be run from the bottom of the control panel through a pre-cut hole.

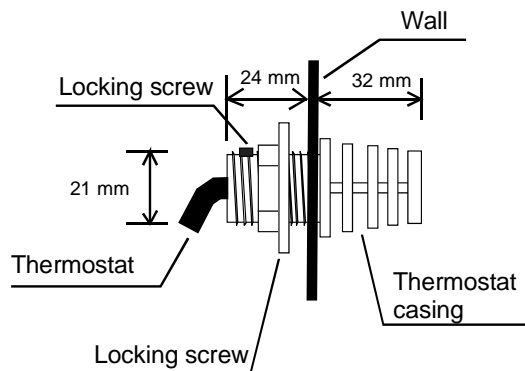
The control panel frame is pressed directly on top of the unit. To remove the frame, use the included tool. The frame has small holes around its edges. (4) Using the tool, lightly press the locking pin in each hole and then pull the frame out.



The button is filled with mass, which allows it to be installed inside the steamroom. The button can be installed through the wall (acrylic walls) or by drilling a suitable hole, into which the button can be set, making sure that its edges are sealed with a suitable caulk. If necessary, surface-mount boxes can be used. These do not require sealing as the button itself is moisture-resistant.



The thermostat is installed 170 cm above floor level, preferably on the wall opposite the steamroom door. If required, the back nut can be used when working with a plexiglas wall. On thicker walls, a hole can be drilled out and sealed with a suitable caulk to prevent moisture from reaching building structures. The thermostat is inserted into its casing and then fastened with locking screws.



DISCHARGING AND FLUSHING:

A separate electrically-operated valve with a separate automatic drain and rinsing operation is available for the steamer (Accessory). The electrically-operated drain valve opens once 15 minutes has passed since the steamer shuts down.

This function is available in both control panel and button operation versions.

In the button version the LED will flash in one-second intervals during the 15-minute discharge and flushing wait period after the steam generator has shut off.

After the tank has been discharged, the steam generator will wait for the next start command.



DISCHARGE VALVE :

Installation of the HSX steam generator:

- Use the duct tape included (as a minimum) to seal the electrically-operated valve threads.
- Connect the included electrically-operated valve power cord to the power mains.
- Run a discharge pipe from the discharge valve into a drain. NOTE! Because water will run at its own pressure, the steam generator should be installed some distance away from the drain.

ALARMS:

Control panel

E1 When switching on or with the steam generator already running, the water faucet is shut or water is for some other reason being prevented from flowing into the steam generator. Turn on the water faucet. If the fault is in the steam generator, it may require servicing.

E2 The fault alarm will be given when the serial traffic between the control panel and circuit board malfunctions.

Requires service to find the cause of the fault.

When the fault alarm is given, the steam generator will shut down. Repair the cause of the fault or call an authorised service technician. Malfunctions can be reset by pressing the ON/OFF button.

In **button**-equipped versions the button LED will flash rapidly when the fault is detected; the steam generator is running when the water faucet is shut or for some other reason water is being prevented from flowing into the steam generator. This alarm is also given when the water feed is cut while the steam generator is running. The malfunction can be reset by pressing the button. Repair or replace the cause of the fault.

The circuit board output for an external alarm is 12 V DC max 50 mA. The output is activated when alarm E1 or E2 is displayed or the LED flashed rapidly. The alarm is reset by pressing the ON/OFF button.

HSX STEAM GENERATOR SERVICING PROCEDURES:

The HSX steam generator has a programmed automatic function which drains and rinses the tank after each use. (The electrically-operated drain valve is an accessory.) A long service life is also achieved by emptying the steam generator tank immediately after use in areas where the water is perhaps not of the best possible quality. However, draining the tank is not an alternative for the regular removal of lime from the tank. It is also worth cleaning the surface sensor at times. These procedures should be undertaken either by a service centre or some other professional person.

Testing water quality and lime removal for the HSX steam generator

Included with the steam generator test kit are testing strips, which are used to test the water supply hardness as follows: dip the test strip in the water for about 1 second, pull it out and shake off the excess water. After one minute, compare the colour of the strip with the colour code on the package.

Test result: < 3° dH, Very soft water, Lime removal once every 500 operating hours.
> 4° dH, Soft water, Lime removal once every 100 operating hours.
> 7° dH, Moderately hard water, Lime removal once every 50 operating hours.
> 14° dH, Hard water, Lime removal once every 30 operating hours,
installation of a lime removal device recommended.
> 21° dH, very hard water, Install a lime removal device and retest water hardness.

These maintenance intervals are the maximum times as recommended by the manufacturer. It can be worthwhile undertaking the removal of lime and cleaning of the surface sensor even more frequently, when necessary.

**Warranty for the equipment is void, if the steamgenerator has been installed or it has been used differently to what has been stipulated in the (use instructions) manual.
The warranty also excludes functional problems, if they are caused by so called hard (with high dH) or otherwise impure water.
The steam generator must be serviced as instructed in the user manual.**

LIME REMOVAL INSTRUCTIONS:

Lime removal on the HSX steam generator is very easy. Recommended by Saunatec, the citric acid is completely safe to use.

The HSX steam generator is equipped with a lime remover fill pipe, which facilitates adding remover to the water tank.



How to remove lime:

1. Add 50g of citric acid (packet) to 1 litre of water and stir. Allow the remover to dissolve in the water.
2. Remove the plastic cover from the steam generator and open the fill pipe cap.
3. Pour the solution into the steam generator tank (use a funnel if necessary) and screw the cap back on.
4. Turn on the steam generator and let the water boil for approximately 10 minutes. When the water has boiled sufficiently, shut off the steam generator and, depending on whether it is equipped with an automatic or manual discharge valve, do the following:
 - **Automatic discharge valve:** The steam generator discharges and flushes itself 15 minutes after shutting down. After the first discharge, the steam generator will turn on again and refill the tank with water. The generator shuts down again, and discharges and flushes again after 15 minutes. This can be repeated about 3-5 times.
 - **Manual discharge valve:** After boiling, allow the citric acid solution work in the tank for about 15 minutes and then discharge the tank by opening the discharge valve. Close the valve after the first discharge and turn on the steam generator again until the tank is full. Shut off and discharge the tank again. Repeat this about 3-5 times.

The steam generator will be ready to use immediately after lime removal. If you detect a lemony aroma in the steamroom after lime removal, flush the steam generator again. Citric acid is not harmful to the health.

STEAM GENERATOR FOR PROFESSIONAL USE:

In addition to lime removal, we recommend drafting a service plan for steam generators which are in daily use (5 or more hours). The steam generator should be serviced at least 2 times a year, including a visual inspection and cleaning of the resistors and surface level sensor as well as an inspection and cleaning of the tank interior (lime deposits). Replace parts, wherever necessary. The tank is cleaned through the resistor mounting holes.